1116-30-989   **Pritha Chakraborty*** (`pritha.chakraborty@ttu.edu`) and **Alexander Solynin**. *Non-Linear Extremal Problems in Bergman Spaces.*

The Bergman space $\mathcal{A}^2(\mathbb{D})$ is the set of square integrable analytic functions in the unit disc $\mathbb{D} = \{z \in \mathbb{C} : |z| < 1\}$. Boris Korenblum conjectured in 1991 and Walter Hayman proved in 1992 that for f, $g \in \mathcal{A}^2(\mathbb{D})$, there is a constant c, $0 < c < 1$, such that if $|f(z)| \leq |g(z)|$ for all z in $c \leq |z| < 1$, then $\|f\|_2 \leq \|g\|_2$. The largest possible value of such c is called the Korenblum's constant. The exact value of this constant, which is denoted by κ, remains unknown. I will discuss some non-linear extremal problems in Bergman space and prove some results which will shed some light on the Korenblum's problem. (Received September 15, 2015)

1